UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,903	03/30/2004	Tetsuya Utsumi	5000-5157	7614

27123 7590 08/18/2005

MORGAN & FINNEGAN, L.L.P.
3 WORLD FINANCIAL CENTER
NEW YORK, NY 10281-2101

EXAMINER	
MONDT, JOHANNES P	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,903	UTSUMI ET AL.	
	Examiner	Art Unit	
	Johannes P. Mondt	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *12-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/30/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the Group I invention (claims 1-8) (an area light emitting or optical device) in the reply filed on 7/27/05 is acknowledged.

Information Disclosure Statement

The examiner has considered the items listed on the Information Disclosure Statement (IDS) filed 3/30/04. A signed copy of Form PTO-1449 is herewith enclosed.

Drawings

2. *Figures 3(b) and 4(b)* should be designated by a legend such as --*Prior Art*-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. ***Claims 1-6 and 10-11*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al (5,870,160) in view of Smith Jr. et al (6,049,370).

On claim 1: Yanagawa et al teach an area light emitting device (title and abstract: note backlight BL) for use with an optical member (polarizer POL2; e.g., cols. 17-19 and Example 1: see Figure 1) (N.B.: said polarizer changes the orientation of the light, namely: the orientation of the electromagnetic oscillation that is the essence of light), the area light emitting device comprising:

a substrate SUB2/SPC (col. 7, l. 60-65 and col. 17, l. 13-16); and an area light emitting element BL (col. 16, l. 57-64) arranged on the substrate; wherein:

the substrate includes a first surface facing the area light emitting element (=lower main surface in Figure 1) and a second surface facing away from the area light emitting element (=upper main surface in Figure 1); the area light emitting element emits light that enters the first surface and exits from the second surface (both surfaces have transparent portions connected through a straight line with points within BL, said straight line crossing only transparent material (POL1, and SUB2 are all transparent (col. 7, l. 60-67), said polarizer POL1 inherently so as polarizer: see Figure 1); and the second surface includes a recess, either defined as formed along the upper main surface of SUB2 and along the side surfaces of SPC spacers on the inside laterally; Figure 1, or, in the alternative, as the space taken up by POL2 and COM (said space forming a recess within the recess defined above), for accommodating the optical member in which the optical member changes the characteristics of light emitted from the area light emitting element.

Yanagawa et al do not necessarily teach the limitation that said substrate is transparent or translucent along the second surface including the recess, although Yanagawa et al do teach portion SUB2 to be transparent (col. 7, l. 60-65). However, Yanagawa et al teach the spacers SPC to be made of metal foils (col. 19, l. 10-15) with a sheet resistivity not larger than the same value of $10^8\ \Omega/$ that is preferably the upper value of the sheet resistivity of transparent, electrically conductive layer COM (col. 18, 53-61) made of ITO (indium-tin-oxide) (col. 20, l. 45), an inherently transparent material, said conductive layer COM abutting said spacers. Furthermore, the use of ITO in spacers has long been known in the art, as witnessed by a patent on liquid crystal displays (title, abstract) to Smith et al, who teach the use of ITO for spacers 36 made of ITO (col. 3, l. 50-60 and Figures 2 and 3) in the liquid crystal display (hence analogous art). *It would have been obvious* to make said spacers of the same material (ITO) as the transparent, electrically conductive layer COM in light of the teaching by Yanagawa et al that it is important that the flow of electricity from the COM layer to the SPC spacers helps avoiding a deterioration of display quality (col. 19, l. 5-15) and in view of the known selection of ITO for spacer material in the liquid crystal display art.

Motivation to include a teaching of ITO spacers derives from the explicit teaching by Yanagawa et al that the flow of electricity from COM to SPC helps avoiding a deterioration of display quality from static electricity (col. 19, l. 5-15) (an interface otherwise unavoidable between SPC and COM inherently would introduce a contact resistance thereby increasing the resistance and inhibit the flow of electricity taught to be desirable; in addition the selection of ITO for SPC result in obvious cost savings of

using the same material for different components of abutting regions with the same material requirement on conductivity. Immediately resulting from this extension is the transparency of the entire substrate SUB2/SPC.

On claim 2: The recess according to both alternative definitions of said recess (see rejection of claim 1) in Yanagawa et al is positioned substantially at the center of the second surface (Figure 1).

On claim 3: the recess according to both alternative definitions of said recess is defined by a bottom surface and side surfaces surrounding the entire periphery of the bottom surface (cf. Figure 1).

On claim 4: the recess according to both alternative definitions of said recess completely accommodates the entire optical member POL2 (Figure 1).

On claim 5: the recess according to the first definition has a depth, and the optical member has a thickness, the depth of the recess being greater than the thickness of the optical member (because POL2 has SPC located above it (Figure 1).

On claim 6: the recess according to the second definition (namely: as the space taken up by POL2 and COM) has a depth, and the optical member has a thickness, the depth of the recess being substantially the same as the thickness of the optical member (Figure 1).

Claim 10: Yanagawa et al teach an optical device (title) comprising: an optical member POL2 (polarizer POL2; e.g., cols. 17-19 and Example 1: see Figure 1) (N.B.: the polarizer changes the orientation of the electromagnetic oscillation that is the essence of light); a substrate SUB2/SPC (col. 7, l. 60-65 and col. 17, l. 13-16); and an

area light emitting element BL (col. 16, l. 57-64) arranged on the substrate; wherein: the substrate includes a first surface (=lower main surface in Figure 1) facing the area light emitting element and a second surface (=upper main surface in Figure 1) facing away from the area light emitting element; the area light emitting element emits light that enters the first surface and exits from the second surface (both surfaces have transparent portions connected through a straight line with points within BL crossing only transparent material, namely: Pol1 (polarizer, being inherently transparent), SUB1 (col. 7, l. 60-67) and transparent substrate SUB1 itself (loc.cit.): see Figure 1); and the second surface includes a recess , either defined as formed along the upper side of SUB2 and all surfaces of SPC that are located on the inside laterally; Figure 1, or, in the alternative, as the space taken up by POL2 and COM, for accommodating the optical member in which the optical member changes the characteristics of light emitted from the area light emitting element.

Yanagawa et al do not necessarily teach the limitation that said substrate is transparent or translucent along the second surface including the recess, although Yanagawa et al do teach portion SUB2 to be transparent (col. 7, l. 60-65). However, Yanagawa et al teach the spacers SPC to be made of metal foils (col. 19, l. 10-15) with a sheet resistivity not larger than the same value of $10^8\ \Omega/$ that is preferably the upper value of the sheet resistivity of transparent, electrically conductive layer COM (col. 18, 53-61) made of ITO (indium-tin-oxide) (col. 20, l. 45), an inherently transparent material, said conductive layer COM abutting said spacers. Furthermore, the use of ITO in spacers has long been known in the art, as witnessed by a patent on liquid

crystal displays (title, abstract) to Smith et al, who teach the use of ITO for spacers 36 made of ITO (col. 3, l. 50-60 and Figures 2 and 3) in the liquid crystal display (hence analogous art). *It would have been obvious* to make said spacers of the same material (ITO) as the transparent, electrically conductive layer COM in light of the teaching by Yanagawa et al that it is important that the flow of electricity from the COM layer to the SPC spacers helps avoiding a deterioration of display quality (col. 19, l. 5-15) and in view of the known selection of ITO for spacer material in the liquid crystal display art.

Motivation to include a teaching of ITO spacers derives from the explicit teaching by Yanagawa et al that the flow of electricity from COM to SPC helps avoiding a deterioration of display quality from static electricity (col. 19, l. 5-15) (an interface otherwise unavoidable between SPC and COM inherently would introduce a contact resistance thereby increasing the resistance and inhibit the flow of electricity taught to be desirable; in addition the selection of ITO for SPC result in obvious cost savings of using the same material for different components of abutting regions with the same material requirement on conductivity. Immediately resulting from this extension is the transparency of the entire substrate SUB2/SPC.

On claim 11: the recess completely accommodates the entire optical member POL2. (see Figure 1).

5. ***Claim 1*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al (US 2002/0089624 A1) in view of Yanagawa et al (5,870,160). *Matsumoto et al teach* an area light-emitting device (cf. title, abstract and [0001]) for use with an optical member 7 ([0037]; a black matrix, which is an optical member because it

influences light by preventing light to go through it), the area light emitting device comprising: a transparent or translucent substrate 10 (overcoat layer 10 inherently is transparent because only the black matrix portions prevent light from going through; cf. [0035]-[00039]); and an area light emitting element producing backlight ([0046]); wherein the substrate includes a first surface facing the area light element (=lower main surface of 10) and a second surface facing away from the area light emitting element (=upper main surface of 10) (cf. Figures 4, 6); the are light emitting element emits light that enters the first surface and exits from the second surface (N.B.: notice the location on said upper surface of said color filters 8 ([0035-[0037]); wherein the second surface includes a recess (defined as the location of BM sections 7; see Figures 4, 6) for accommodating the optical member in which the optical member changes the characteristics of light emitted from the area light emitting element, namely black matrix changes the intensity of said light to substantially zero levels ([0037]).

Matsumoto et al do not necessarily teach the limitation that said area light emitting element is arranged on said substrate; *however, it would have been obvious to include said limitation because the light has to come from the back of the device, and moreover, Yanagawa et al,* in a patent on a liquid crystal display (hence analogous art) teach to secure said light-emitting element BL secured on said transparent substrate SUB2 through a housing MD thus securing a central position laterally underneath said substrate by which light optimally reaches said transparent substrate from below (cf. Figure 1). *Motivation* to include the teaching by Yanagawa et al is the resulting

substantially perpendicular incidence of light used in the liquid crystal display's active area.

6. ***Claims 7 and 8*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al and Yanagawa et al as applied to claim 1 above, and further in view of Aoki et al (JP 10288705A). As detailed above, claim 1 is unpatentable over Matsumoto et al in view of Yanagawa et al, neither however necessarily teaching the further limitation defined by claim 7. However, it would have been obvious to include said further limitation in view of Aoki et al, who, in a patent publication on color filter and black matrix (BM) sections in a liquid crystal display ([0001]) (hence analogous art) teach that black matrix sections can be made to reflect light less by positioning said BM sections in recesses of the transparent substrate wherein the bottom surface of the recess is a rough surface (see English abstract and Drawing 1). *Motivation* to include the teaching by Aoki et al derives from the resulting improvement by strongly reducing reflected light from the black matrix sections, thus improving the functionality of said black matrix sections as light absorbers.

On claim 8: the surface roughness as taught by Aoki et al is in the range of 0.03 – 2 μm. This range overlaps considerably with the range as claimed. Applicant is reminded that it has been held that a *prima facie* case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art or when the ranges of a claimed composition do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties. In re Peterson, 65 USPQ2d 1379 (CA FC 2003).

7. ***Claim 9*** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al and Smith Jr. et al as applied to claim 1 above, and further in view of Hamada et al (US 2002/0081453 A1). *As detailed above, claim 1 is unpatentable over Yanagawa et al in view of Smith et al. Neither Yanagawa et al nor Smith Jr. et al do not necessarily teach* the further limitation defined by claim 9. However, it would have been obvious to include said further limitation in view of Hamada et al, who teach as prior art the use of an organic electroluminescence device as a backlight in a liquid crystal display for the specific advantage of its capability to emit light even at low voltage (see [0006]). *Motivation* to include the teaching by Hamada et al in this regard thus immediately flows from the cost savings of low-voltage operation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
August 11, 2005

Patent Examiner:

Johannes Mondt (art Unit: 2826).